

REMARKS

Claims 1-6 and 8-35 are pending in this application, claims 10-34 having been withdrawn from consideration. By this Amendment, claims 1 and 10 are amended, and claim 7 is canceled without prejudice to or disclaimer of the subject matter set forth therein. Support for the amendments to claims 1 and 10 can be found in the specification as originally filed, for example, at paragraph [0031]; paragraph [0104], Table 2; and in original claims 1, 7 and 10. No new matter is added by this amendment.

I. 35 U.S.C. §102

The Office Action rejects claims 1-3 and 5-9 under 35 U.S.C. §102(e) over U.S. Patent No. 6,890,654 to Stupp et al. Applicants respectfully traverse this rejection with respect to claims 1-3, 5, 6, 8 and 9, claim 7 having been canceled herein.

Independent claim 1 sets forth a "wire comprising a core wire of a carbon nanotube structure in which functional groups bonded to plural carbon nanotubes are chemically bonded and mutually cross-linked to configure a mesh structure, wherein each of the cross-linked sites, where the plural carbon nanotubes are cross-linked to one another, has at least one chemical structure selected from the group consisting of -COOCO-, -O-, -NHCO-, -COO-, -NCH-, -NH-, -S-, -O- and -NHCOO-." Claims 2, 3, 5, 6, 8 and 9 depend, directly or indirectly, from claim 1 and incorporate all of the limitations of claim 1 and any intervening claims.

Stupp teaches carbon nanotube coated wires in which single-wall and/or multiple wall carbon nanotubes are surrounded by aggregations of amphiphiles. *See* Stupp, Abstract; col. 5, lines 47-50. The Stupp amphiphiles may self-assemble around carbon nanotubes in an aqueous solution and may include moieties that may be cross-linked to form stable structures. *See* Stupp, col. 7, lines 29-45. In addition, Stupp teaches reversible cross-linking via oxidation to form dithiol bonds. *See* Stupp, col. 9, lines 23-32. Thus, the Office Action takes

the position that Stupp discloses all of the features of claims 1-3 and 5-9. Applicants respectfully disagree.

Independent claim 1 requires that each of the cross-linked sites of the claimed wire, "where the plural carbon nanotubes are cross-linked to one another, has at least one chemical structure selected from the group consisting of -COOCO-, -O-, -NHCO-, -COO-, -NCH-, -NH-, -S-, -O- and -NHCOO-." However, Stupp teaches only dithiol (-S-S-) cross-linkages. *See generally* Stupp.

Because Stupp fails to teach any of the chemical structures of the claimed cross-linkages, Stupp cannot anticipate independent claim 1 or its dependent claims. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. 35 U.S.C. §103

A. Claim 4

The Office Action rejects claim 4 under 35 U.S.C. §103(a) over U.S. Patent No. 6,890,654 to Stupp et al. Applicants respectfully traverse this rejection.

Claim 4 depends from claim 1, which is set forth above, and includes all of the limitations of claim 1.

As discussed above with respect to claim 1, Stupp does not teach, nor does it suggest, a wire in which cross-linkages between carbon nanotubes have at least one of the claimed chemical structures.

Because Stupp does not teach or suggest this feature, Stupp would not have rendered claim 1 or its dependent claim 4 obvious at the time the invention was made. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Claim 35

The Office Action rejects claim 35 under 35 U.S.C. §103(a) over U.S. Patent No. 6,890,654 to Stupp et al. in view of U.S. Patent No. 6,682,677 to Lobovsky et al. Applicants respectfully traverse this rejection.

Claim 35 depends from claim 1, which is set forth above, and includes all of the limitations of claim 1.

As discussed above with respect to claim 1, Stupp does not teach, nor does it suggest, a wire in which cross-linkages between carbon nanotubes have at least one of the claimed chemical structures. Because Stupp does not teach or suggest this feature, Stupp alone would not have rendered claim 1 or its dependent claim 35 obvious at the time the invention was made. Combining Stupp with Lobovsky does not remedy this shortcoming of Stupp.

Lobovsky teaches winding carbon nanotube ribbons to form electromagnets. *See generally* Lobovsky. However, Lobovsky, like Stupp, does not disclose or suggest a wire in which each of the cross-linked sites of the claimed wire, "where the plural carbon nanotubes are cross-linked to one another, has at least one chemical structure selected from the group consisting of -COOCO-, -O-, -NHCO-, -COO-, -NCH-, -NH-, -S-, -O- and -NHCOO-," as required by independent claim 1.

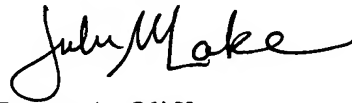
Because neither Stupp nor Lobovsky teach or suggest at least this limitation of independent claim 1, no combination of Stupp and Lobovsky would have rendered independent claim 1 or its dependent claim 35 obvious at the time the invention was made. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-6 and 8-35 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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